

AMERICAN CYANAMID CO.  
PARSIPPANY, NJ 07054

MATERIAL SAFETY DATA SHEET

MSDS NO. AG09139-2  
CAS NO. 40487-42-1

DATE: JUN 02, 1997

EMERGENCY TELEPHONE: (973)-683-3100 (U.S.A.)

PRODUCT  
IDENTIFICATION

TRADE NAME: PENTAGON™ DG Herbicide  
SYNONYMS:  
CHEMICAL FAMILY: Not Applicable  
MOLECULAR FORMULA:  $C_{13}H_{19}N_3O_4$   
MOLECULAR WEIGHT: 281.300 Pendimethalin  
USAGE: Herbicide

WARNING  
STATEMENTS

CAUTION: Avoid contact with skin and eyes; avoid  
breathing dust or dust particles.

INGREDIENTS

COMPONENT	CAS. NO.	%	PEL/TLV
Inerts		40.00	
Pendimethalin	40487-42-1	60.00	

REFERENCE: Inerts  
Pendimethalin

PHYSICAL  
PROPERTIES

APPEARANCE AND  
ODOR: Yellow granules, nutty odor  
BOILING POINT: Not Applicable  
MELTING POINT: Not Applicable  
VAPOR PRESSURE: Not Applicable  
% VOLATILITY  
(BY VOL.):  
OCTANOL /  
H<sub>2</sub>O Not Available  
PARTITION COEF.:  
PH: 7-10.0  
SATURATION IN  
AIR (BY VOL.):  
EVAPORATION RATE: Not Applicable  
SOLUBILITY IN  
ORGANICS: Disperses

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FIRE AND EXPLOSION HAZARD INFORMATION	FLASH POINT:	Not Available
	FLAMMABLE LIMITS	Not Available
	(% BY VOL.):	
	AUTOIGNITION TEMP:	Not Available
	DECOMPOSITION TEMP:	Not Available

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FIRE EXTINGUISHING MEDIA:

Use water, foam, dry chemical, or carbon dioxide to extinguish fires.

FIRE CONTROL TACTICS:

Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.

Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent material run-off. Use spray or fog - solid stream may cause spreading.

Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area.

Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water - if water enters a drainage system, advise the authorities downstream.

SPECIFIC HAZARDS - DUST:

This material has been tested in a 20-liter spherical bomb (per NFPA 68-1978) and has been found to be a Class 1 dust explosion hazard. 20% of this material passed through a 200 mesh screen for explosion testing. If the material is further processed, the dust explosion hazard may change and it should be retested.

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NFPA HAZARD

RATING	0 Least	1	Flammability	
	1 Slight	/ \	/ \	
	2 Moderate	2 0	Health	Reactivity
	3 High	\ /	\ /	
	4 Severe		Special	

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REACTIVITY DATA	STABILITY:	Stable
	CONDITIONS TO AVOID:	None
	POLYMERIZATION:	Will not occur

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HEALTH HAZARD  
INFORMATIONTOXICITY DATA AND  
EFFECTS OF OVEREXPOSURE:ACUTE TOXICITY DATA:

The combined oral LD<sub>50</sub> in male and female rats was greater than 5000 mg/kg, indicating that the material is relatively non-toxic by ingestion in single doses.

The combined dermal LD<sub>50</sub> in male and female rabbits was greater than 2000 mg/kg, indicating the product is no more than slightly toxic by single skin applications.

The material was slightly irritating to both eye and skin in animal studies (rabbit).

Based upon results of a sensitization study in guinea pigs, Pentagon DG was considered a non-sensitizing agent.

Results from a four hour exposure inhalation study in rats have shown a LC<sub>50</sub> value of >1.6 mg/l of air, indicating that the material is slightly to moderately toxic by this route of exposure.

Direct contact of this product with the skin or sclera of the eyes may cause orange-yellow staining which will, however, fade in time.

CHRONIC TOXICITY DATA:PENDIMETHALIN

MUTAGENICITY: In an evaluation of data from a battery of six genotoxicity tests, pendimethalin was judged to be nongenotoxic.

TERATOGENICITY: No teratogenic or fetotoxic effects were observed in rats or rabbits.

REPRODUCTION: No reproductive effects were observed in a three-generation reproduction study conducted with rats.

ONCOGENICITY: No oncogenic effects were observed at all dosed levels tested in the lifetime (18 months) mouse study. The highest dose tested was 5000 ppm in the diet.

A marked depression in body weight gain and a statistically significant increase in benign thyroid adenomas were observed at the highest dose tested (5000 ppm) in the lifetime (24 months) rat study.

The Environmental Protection Agency (EPA), Office of Pesticide Programs, Carcinogenicity Peer Review Committee (PRC) has assigned pendimethalin an oncogenicity rating of low "C", (possible human carcinogen, not requiring quantitative risk assessment).

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EMERGENCY AND FIRST AID PROCEDURES:

IF IN EYES: Flush eyes with large amounts of water.  
Get medical attention if irritation persists.

IF ON SKIN: Wash skin with plenty of soap and water.  
Get medical attention if irritation persists.

IF SWALLOWED: Drink two glasses of water. Induce  
vomiting by touching the back of the throat with fingers.

IF INHALED: If exposure is excessive, remove to fresh  
air.

NOTES TO PHYSICIAN:

Pendimethalin is a strongly orange-red colored compound -  
virtually an aniline dye. Cases have been described of  
orange-yellow coloration of the urine following heavy  
exposure of workers to the dust of this compound. Despite  
its structure as both a nitro-compound and aromatic amine,  
exposure to pendimethalin is not associated with  
methemoglobinemia.

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EXPOSURE  
CONTROL METHODS

Use adequate ventilation. Avoid unnecessary or  
prolonged contact with skin by wearing gloves and  
goggles.

Prevent inhalation of dust particulate by using a  
NIOSH-approved toxic dust respirator.

Wash thoroughly with soap and water after handling  
the material which leaves a yellow stain on skin,  
and the stain disappears in time.

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SPILL OR LEAK  
PROCEDURES

Wear appropriate protective clothing and personal  
protective equipment. (See "Exposure Control".)

Keep away from drains, surface and ground water,  
and soil.

Keep all sources of ignition away from the spill,  
and avoid creating dusty conditions when handling  
this material. If dusting cannot be avoided, ground  
all equipment.

Shovel or sweep the spilled material into covered  
containers for proper disposal. (See "Waste  
Disposal".) If possible, try to reuse the material  
for its intended purpose.

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Rinse the spill area and any tools or implements several times with soapy water. Contain and absorb this rinsate with inert absorbents and place into the same covered container as the spilled material.

Small spills to the soil can be shoveled directly into covered containers for disposal. In the event of a large spill, contact American Cyanamid for guidance on available clean-up options. Depending on the amount released to the environment, it may be necessary to notify the regulatory authorities.

If the spill occurred to a body of water, immediately notify the appropriate authorities downstream of the spill so that they can decide what if any further action is needed.

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WASTE DISPOSAL: To avoid disposal, all attempts should be made to use the product completely, in accordance with its registered use. If this is not possible, handle with care and dispose in a safe manner.

Empty containers or liners may retain some product residues. DO NOT REUSE. Triple rinse the container or liner thoroughly and render it unusable by crushing or puncturing. Dispose of both the container and the rinsate in a safe manner.

It is the ultimate responsibility of the waste generator to determine at the time of disposal whether this material and/or "empty" container residue meets any hazardous waste criteria.

Follow all applicable community, national or regional regulations regarding waste management methods.

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SPECIAL  
PRECAUTIONS

HANDLING AND STORAGE:

Do not contaminate water, food, or feed by storage or disposal. Store in a secure, dry, well-ventilated, separate room, building or covered area.

Not for use or storage in or around the home.

Keep away from sources of ignition and protect from exposure to fire and heat.

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Segregate from oxidizers and incompatible materials listed in the Reactivity Data Section.

Maintain good housekeeping to control dust accumulations.

Due to the dust explosion hazard, all equipment should have explosion venting per NFPA 68-1978. All electrical wiring and equipment should meet the provisions of NFPA-70.

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ADDITIONAL REGULATORY INFORMATION

SARA Title III Data

Section 311 and 312 Hazard Categories

Immediate Health Hazard - Y      Reactive Hazard - N

Delayed Health Hazard    - N      Sudden Pressure - N  
Release Hazard

Fire Hazard                      - N

Section 302 Extremely Hazardous Substances - None

Section 313 Toxic Chemicals - None

CERCLA Reportable Quantity

PENTAGON™ DG Herbicide - None.

RCRA Hazardous Waste Code(s) And Statement(s)

PENTAGON™ DG Herbicide - None.

It is the responsibility of the hazardous waste generator to determine, prior to disposal, if any hazardous waste codes apply.

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APPENDIX

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

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SOURCE AND                      SHEET NO.:    AG09139-2

DATE INFORMATION

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